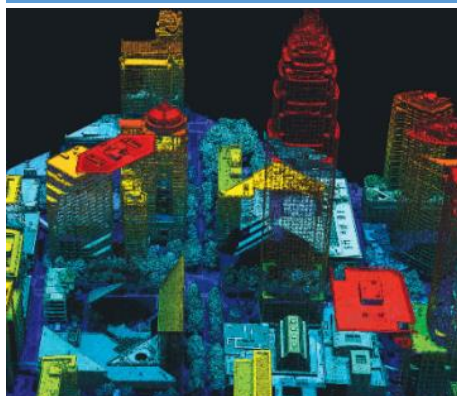




North Carolina Department of Transportation  
Transportation Program Management Unit - Value Management  
Innovative Technologies and Products Awareness Report  
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## TECHNOLOGY HIGHLIGHT – LiDAR



Example of LiDAR data. From Harris website.

Photogrammetry downloads the LiDAR elevation dataset into ARCGIS. After a quality review of the data, it is stored in ArcGIS (geographical information system) and used to generate Digital Elevation Models (DEM) and Digital Terrain Models (DTM) for planning and design activities. In 2016, the statewide program began using an updated LiDAR system that collects four times as many points than the previous model. This allows for improved accuracy and quality of data which enhances the preliminary information used for planning and design and can improve project designs.

The Photogrammetry Unit and NCEM have been on the forefront of LiDAR technology since 2001 when NC became the first Technical Cooperating State which partnered with Federal Emergency Management Agency (FEMA) to assume responsibility for the Flood Insurance Rate Maps (FIRM). NCEM and the Photogrammetry Unit again partnered in 2014 to collect highly accurate, denser LiDAR to update the FIRMs to meet FEMA's map maintenance requirement. The current statewide LiDAR dataset is expected to be completed in 2018. For more information on the updated LiDAR system the program began using in 2016, please visit <https://www.harris.com/solution/geiger-mode-lidar>.



Example of Final Base Plan Sheet provided to design units.

## PRODUCT HIGHLIGHT – QPR UltiMax

QPR UltiMax is a water activated, fast setting asphalt repair material made by Quality Pavement Repair (QPR), headquartered in Tennessee. The product is used for quick repair of potholes in addition to depressions, aprons, edging, berms and water control. The product has a full cure time of 24 hours but may be driven over immediately and is comparable to the pothole repair product currently being used by NCDOT Maintenance. The product is innovative because of its unique formula. It's environmentally friendly and does not contaminate groundwater supplies, aquifers, or storm water runoff which allows for quick installation, without environmental protections needed. QPR UltiMax is installed by cleaning the area to be patched or filled, adding the product material, water, and compacting. The product can be installed in cold and damp conditions which assists the Maintenance Department in meeting their 48 hour pothole repair requirement, per NC Law.



Example of QPR being compacted. From QPR

The product is currently under review by the Product Evaluation Program. Additional information may be found at <http://qprusa.com/>